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Seasonally Changing Activity Patterns of Free-ranging Criollo Cattle in Subtropical Mountain Forests of Southern Bolivia

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Abstract

In southern Bolivia, cattle are often kept in transhumant systems. At the beginning of the dry season in April/May the cattle are moved from the open valleys to the forests in the Boliviano-Tucumano formation where they stay until the rainy season starts in October/November. Little knowledge exists about the activity pattern of the cattle in these subtropical mountain forests. The present study was conducted in two different areas, Rio Tarija (RT) and Meringal (M), located within the Reserva Nacional de Flora y Fauna Tariquía by observing 15 adult Criollo cows during two periods (P1=May-July; P2=Aug.-Nov.). Observation of the activity pattern of the cattle was made by following one animal/day (during 4–5 days per month and study site) and recording the activity types “grazing”, “resting”, “locomoting” and “other activities” every 6 min. Only data obtained between 08:00 h and 16:00 h was used, and only days with at least 71 observation minutes were considered (max. 81 min). Data was analysed per animal, and for animals observed during more than one day per period the mean was calculated. During P1, a period with lower temperatures compared to P2 (13.5°C vs. 18.4°C), the cattle spent most of the time in the forests, where the main activity recorded was grazing and browsing. This behaviour was noted at both study sites, but cattle at RT spent only 51 % of the time observed in the forests, while the cattle at M stayed almost the entire time in the forest (97 %). Both, habitat use and main activity patterns were reversed in P2. At both study sites in P2, the animals spent most of the time on the open river banks (RT: 74 %, M: 84 %). Almost 90 % of the time spent on the river banks in RT and over 90 % in M were used for resting activities. A more moderate wind-chill factor in the open, sandy habitat along the streams as well as relief from biting insects (mainly horse flies) and ticks are assumed to have been the main reasons for the intensive use of the river bank habitats in P2.

Keywords: Behaviour, forest grazing, resting, silvopastoralism